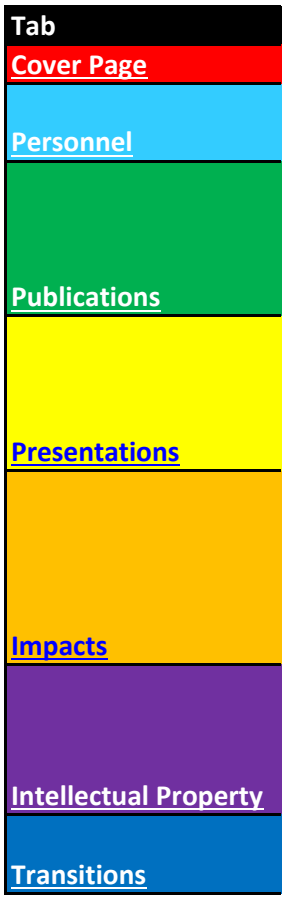
Tab
Cover Page
Personnel
Publications
Presentations
Impacts
Intellectual Property
Transitions

Please fill out the requested information on all tabs (click on each bottom colored tab or sheet) labeled Cover Page, Personnel, Publications, Presentations, Impacts, Intellectual Property, and Transitions. For annual reports, please only describe DTRA funded work for the reporting period (July 1, 2014 - June 30, 2015).

Description
Providing information about the project participants and collaborating organizations allows an assessment of performance in promoting partnerships and collaborations.
The products from an effort demonstrate the excellence of the research and efficacy with which the results are being communicated to colleagues, potential users, and the public. Publications are the characteristic product of research. If there is nothing to report during this reporting period, the awardee shall state "Nothing to Report".
The products from an effort demonstrate the excellence of the research and efficacy with which the results are being communicated to colleagues, potential users, and the public. Many projects (thought not all) may develop products other than publications. In all cases, if there is nothing to report during this reporting period, the awardee shall state "Nothing to Report".
Information on the impact of the research demonstrates how the investment increases the scientific body of knowledge, enlarges the pool of people trained to develop that knowledge and techniques or put it to use, and improves the physical, institutional, and information resources that enable those people to get their training and perform their functions. In all cases, if there is nothing significant to report during this reporting period, the awardee shall state "Nothing to Report".
Information on any intellectual property demonstrates the value of protectable innovative ideas resulting from sponsored research and includes patents, inventions, and licenses. Submission of this information is not a substitute for other invention reporting requirements under the awards terms and conditions. In all cases, if there is nothing significant to report during this reporting period, the awardee shall state "Nothing to Report".
Refers to cases where knowledge resulting from your DTRA sponsored effort will be further developed for, or will be used in, a technology application. Transition sponsors can be entities in DoD, other federal agencies, or industry.

	SHADED FIELDS ARE REQUIRED
Report Submitted to	**Defense Threat Reduction Agency**
Grant/Award #	IACRO (13-5897I)
Organization/Institution	Sandia National Laboratories
Project Title	Basic Research of Intrinsic, Tamper Indication Markings and Patterns Defined by Pulsed Laser Irradiation
Name of Submitting Official	David P. Adams (PI); Deidre Hirschfeld (Line Manager)
Title of Submitting Official	PI; Line Manager
Email Address	dpadams@sandia.gov; dhirsch@sandia.gov
Phone Number	505-844-8317; 505-284-5537
Submission Date	
Reporting Period End Date	**June 30th, 2015**
Reporting Period	**Annual**

	Foreign Spending Country	**Foreign Spending ($)**
Country 1	none	
Country 2		
Country 3		

Proceed to Personnel

Enter the principle investigator (PI) and all other personnel that have worked regardless of the source of compensation.

Instructions

Select the appropriate personnel type from the drop down list.

Enter Suffix (e.g. Jr., Sr., III)

Award #	Personnel Type	Last name	First name	Suffix
Example	*Post-Doc*	*Smith*	*John*	*Jr.*
IACRO (13-5897I)	Post-Doc	Murphy	Ryan	
IACRO (13-5897I)	Graduate Student	Cahyadi	Rico	
IACRO (13-5897I)	Technician	Saiz	David	
IACRO (13-5897I)	Co-PI	Adams	David	
IACRO (13-5897I)	Graduate Student	Lawrence	Samantha	
IACRO (13-5897I)	Co-PI	Moody	Neville	
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Proceed to Publications

at least one person month (~160 hours) on this DTRA project during the reportin

Enter the number of months worked rounded to the nearest month.	Enter the FULL name of the university, organization, or institution.	Enter the Hirsch index for PI and Co-PI(s). Single whole number only.	Select whether a student has graduated or not.
Person Months Worked	**Organization/Institution**	**Hirsh Index**	**Graduated**
3	*State University*		
6	Sandia National Laboratories		
6	University of Michigan		No
3	Sandia National Laboratories		
4	Sandia National Laboratories	24	
4	Purdue University		Yes
1	Sandia National Laboratories	22	

g period,

Enter a graduation or anticipated graduation date for student in Month-Year format.

Graduation date (students)
[redacted]
[redacted]
[redacted]
[redacted]
Dec-14
[redacted]

Enter all publications (Journal Articles, Books, Book Chapters, Conference Papers, and Theses/Dissertations) resulting from this DTRA project during this reporting period.
DO NOT include publications that have not yet been submitted.

Instructions	Select the appropriate publication type from the drop down list. Select "nothing to report" if there were no publications.	Enter the full name of all authors.	Select the Journal from the drop down list or enter the FULL name of the journal (book).	Enter the FULL name of the article title (chapter title if book).				Enter the first page number of the article or chapter.	Select the publication status from the drop down list (e.g. Published, Submitted).	Select the publication identifier type (i.e. DOI, ISBM, ISSN).	Enter the publication identifier number for the type selected in the previous column.	Select whether or not an acknowledgment of DTRA support was provided to the publisher.	Select whether or not a journal article or conference paper has gone through the peer review process.

Award #	Publication Type	Author	Journal (Book Title)	Article Title (Chapter Title)	Volume	Issue	Publication Year	Page	Status	Publication Identifier Type	Publication Identifier	Acknowledgement of DTRA Support	Peer Reviewed
Example	*Journal Article*	*John Smith and Jane Doe*	*Journal of Applied Physics*	*Trace chemical analysis using Coherent Anti-Stokes Raman Spectroscopy*	*1*	*1*	*2014*	*112*	*Published*	*DOI*	*10.1021/ja123456x*	*Yes*	*Yes*
IACRO (13-5897I)	Journal Article	R.D. Murphy, D.J. Saiz, M.A. Rodriguez, P.G. Kotula, D.P. Adams	Thin Solid Films	The Sensitivity of Laser-grown Ti-oxide System Optical Properties to Layer Composition and Structure	TBD	TBD	2015	TBD	Under Review	DOI		Yes	Yes
IACRO (13-5897I)	Journal Article	R.D. Murphy, R.S. Goeke, D.J. Saiz, D.P. Adams	Journal of Applied Physics	Laser Grown Ti-oxide Films Exhibiting Memristive Behavior	TBD	TBD	2015	TBD	Under Review	DOI		Yes	Yes
IACRO (13-5897I)	Journal Article	R.D. Murphy, D.J. Saiz, M.A. Rodriguez, P.G. Kotula, D.P. Adams	Surface & Coatings Technology	The Optical Properties of Cr-oxide Films fabricated by Pulsed Laser Oxidation	TBD	TBD	2015	TBD	Under Review	DOI		Yes	Yes
IACRO (13-5897I)	Other	Bill Murphy, Editor	Labs Accomplishments	Global Security	-	-	2015	7	Published		http://www.sandia.gov/news/publications/lab_accomplishments/	Yes	Yes
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Proceed to Presentations

Editors (Book)	Collection (Book)	Publisher (Book)	Publication Location (book)	Media Type (Book)	Edition (Book)
[redacted]					

Enter all presentations (poster or oral) given during the reporting period that resulted from this DTRA project or contained significant results from this DTRA project.

Instructions

Award #	Presentation Type Select the presentation type from the drop down list. Select "Nothing to Report" if there were no presentations.	Presentation (Paper) Title Enter the FULL title of the presentation.	Conference Date Enter the date of the presentation in month/day/year format.	Conference Name Enter the FULL name of the presentation sponsor (e.g. conference, professional society, or university).	Conference Location City, State Enter the location of the presentation (conference) as City, State for domestic meetings or City, Country for international meetings.	Author(s)	Personnel Type Select from the drop down list the personnel type for the presenter.	Acknowledgement of DTRA Support Select whether or not an acknowledgement of DTRA support was included in the presentation.
Example	*Oral Keynote*	*Infrared Spectroscopy of Metal Carbonyls*	*8/1/2014*	*Materials Research Society Fall Meeting*	*Boston, MA*	*John Smith*	*Graduate Student*	*yes*
IACRO (13-5897I)	Poster	Structural Dependence and Mechanisms of LIPSS Formation at a Step Edge due to Single-pulsed Femtosecond Laser Irradiation	2/10/2015	SPIE Photonics West (Conference on Laser based micro- and nano-processing	San Francisco CA	R.S. Cahyadi, B. Torralva, S.M. Yalisove, D.P. Adams, R.D. Murphy	Graduate Student	yes
IACRO (13-5897I)	Poster	Development of Mechanically and Environmentally Stable Oxide Coatings using Pulsed Laser Irradiation	7/11/2014	Gordon Research Conference on Thin Film and Small Scale Mechanical Behavior	Waltham, MA	S.K. Lawrence, D.P. Adams, D.F. Bahr, N.R. Moody	Graduate Student	yes
IACRO (13-5897I)	Oral Invited	Assessing the Role of Adhesion and Fracture on the Performance of Thin Film Systmes	10/12/2014	Materials Science & Technology 2014	Pittsburgh, PA	N.R. Moody, M.J. Cordill, M.S. Kennedy, D.P. Adams, E.D. Reedy, D.F. Bahr, W.W. Gerberich	Co-PI	yes
IACRO (13-5897I)	Oral	Development of Mechanically and Environmentally Stable Oxide Coatings using Pulsed Laser Irradiation	10/13/2014	Materials Science & Technology 2014	Pittsburgh, PA	S.K. Lawrence, D.P. Adams, D.F. Bahr, N.R. Moody	Graduate Student	Yes
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Proceed to Impacts

Enter awards, honors, promotions, or graduations that occurred during the reporting period for the personnel contributing to this DTRA project.

Instructions

Select the impact (honor) type from the drop down list. Select "Nothing to Report" if there were no impacts.

Select the personnel type for the individual who received the award or honor.

Enter the FULL name of the individual who received the award.

Enter the date the award or honor was received in month/day/year format.

Award #	Impact Type	Impact Description	Personnel Type	Awardee Name	Impact Date	Impact Details/Website
Example	*Best Poster*	*Best Graduate Student Poster at the American Physical Society winter conference*	*Graduate Student*	*John Smith*	*9/20/2014*	
IACRO (13-5897I)	Graduation (PhD)	PhD granted	Graduate Student	Samantha Lawrence	12/1/2015	
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Proceed to Intellectual Property

Enter all patents, invention disclosures, and licenses resulting from this DTRA award that were awarded or applied for during the reporting period. Reporting here does NOT replace the reporting requirements for patents and invention disclosures in the terms and conditions of the award.

Instructions	Select the intellectual property type from the drop down list. (i.e. patent, license, or invention) Select "Nothing to Report" if there was no intellectual property.	Enter the FULL title of the intellectual property.	Enter the relevant number for the patent, application, etc.	Enter the country or region in which the patent, invention, or license resides.	Enter the application date in month/day/year format.	Enter the issue date in month/day/year format.		Enter the name(s) of the inventor(s).	Select the status of the patent or application from the drop down list.

Award #	Intellectual Property Type	Title	Number	Country	Application Date	Date Issued	Abstract or Description	Inventors	Status
Example	*Invention*	*Accelerator Device to Detect WMDs*	*123456*	*USA*		*8/3/2014*	*Invention report submitted to State University for an accelerator to detect heavily shielded WMDs*	*John Smith and Jane Anybody*	*Submitted*
IACRO (13-5897I)	Nothing to Report								
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Proceed to Transitions

Enter transitions of the research or technology from this DTRA project.

Instructions	Enter a text description of the transitioned research or technology. Enter "nothing to report" if there were no transitions.	Enter the year that the transition started.	Enter the organization, company, or government agency to the which this work has (is) transitioning.
Award #	**Transition Description**	**Year**	**Transitioned to**
Example	*The accelerator technology for detection of WMDs transitioned to funding from other US government agency for further development*	*2014*	*USGOV Contract # 12-34-5678*
IACRO (13-5897I)	The technology developed for intrinsic laser color markings has been transitioned within the Department Energy and applied to marking of a microcomponent.	2014	Work done at Kansas City Plant
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